Drilling technique damaging less land

By John Porretto Associated Press
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GREATER NATURAL BUTTES, Utah -- Technological advances and Americans' hearty appetite for natural gas have given Anadarko Petroleum Corp. the opportunity to break new ground -- literally and figuratively -- in this remote, rugged region of the Rocky Mountains.

On a cliff several hundred feet above the White River, Texas-based Anadarko is drilling 17 wells from a single location -- a dozen more than it has drilled from a single site in the past.

Rather than spread the wells across the landscape, they'll be concentrated in a relatively small area. The ultimate goal is to snake the drill bit thousands of feet into the earth, tapping natural-gas supplies beneath the river.

"The driving factor is being able to get under the river," said Jordan Hixson, who supervises Anadarko's production operations in northeastern Utah. "We can't get to it drilling conventional, vertical wells."

By using increasingly sophisticated -- and more expensive -- drilling methods and equipment, Anadarko and others are expanding their presence but reducing their "environmental footprint" throughout the Rockies and elsewhere. They're doing so primarily by consolidating wells to groups of 17, 22 and even larger combinations, then drilling in various directions to reach reservoirs, some previously inaccessible.

In Utah, where Anadarko plans to go from 1,200 to 3,500 wells, the company is targeting 24-well combos next year. Its 17-well site occupies about 7 acres; a single-well pad is typically 2 to 2 1/2 acres. Royal Dutch Shell PLC, Williams Cos. and others are expanding their use of the practice in Wyoming, Colorado, New Mexico and other states.

Such clusters cost more because they require the latest equipment and techniques in directional drilling. But analysts say the economics make sense because multiple-well operations allow companies to work more efficiently, decrease environmental disturbance and, in some cases, find new sources of fuel in unconventional geologic formations once too costly to tap.

Higher market prices for natural gas in recent years have helped spur activity.

"Setting aside environmental goodness and conscience, brute economics has driven companies to say it's in their best interest to concentrate their footprint and do what they can from a given location," said Richard Ranger, a senior policy adviser for the American Petroleum Institute.

Shell Exploration & Production Co., an arm of Royal Dutch Shell PLC, is a good example. The company, which began such drilling in Wyoming's natural-gas fields about five years ago, has been moving back to its 60 or so existing work sites, to produce additional wells rather than creating new pads -- and disturbing more landscape.

Shell says it built only two new pads this year but added more than 70 wells.

"This is a major transformation in operating practices in the field," said Pete Stark, vice president of industrial relations at IHS Inc., a provider of technical information and decision-support tools. "It's a big-time change -- a change in response to the increasing confrontation between environmental interests and energy-security interests. It started in the Rockies, but it's spreading elsewhere."

Keren Murphy, the Sierra Club's oil and gas expert in Washington, said the environmental group acknowledges that bunching wells together can prevent disturbance, but it's trying to make sure certain areas don't become "throwaway zones."

"It does help protect areas that are deemed pristine, but it also has the potential to create some sacrifice zones," Murphy said.

The move to multiple wells off single pads also is linked to energy companies' expanding production of unconventional sources such as "tight" sands and shale -- geographic formations that make it tougher to unlock gas and require more wells.

"They're getting more out of the ground, but it's taking more holes to do so," Stark said.

The U.S. Energy Information Administration says 31,587 natural-gas wells were drilled for exploration and production in 2006, up from 16,728 just four years earlier.

Still, natural-gas producers have struggled to keep up with demand. And despite the surge in drilling activity -- buoyed by strong market prices -- there's no expectation the industry will add significant supplies soon. Another key factor making it easier for companies to perform multi-well directional drilling is new rigs.

Drilling contractors Helmerich & Payne Inc. and Nabors Industries Ltd. in the past few years began building rigs with enhanced power that customers report is cutting the time to complete drilling operations by 20 percent to 30 percent.

What's more, in many cases, the rigs slide on rails to their next destination, greatly reducing disturbance to the environment and the time it would take to move a conventional rig from one location to the next.

For now, the Interior Department's Bureau of Land Management will continue to strongly suggest drillers use multi-well pads, though it may eventually require it, said BLM spokeswoman Jaime Gardner.